

CLAIMS

We claim:

- 1 1. A fishing tool guiding mechanism, comprising:
2 a mandrel assembly adapted to attach to a work string for lowering into a well
3 bore or casing;
4 a plurality of elongate fingers, each said finger having an uphole end pivotably
5 attached to a downhole end of said mandrel assembly, each said finger
6 having a free downhole end;
7 a sleeve mounted for movement between uphole and downhole positions
8 relative to said mandrel, said sleeve being adapted to forcibly pivot
9 said downhole ends of said plurality of fingers radially outwardly a
10 sufficient distance to forcibly contact an inner surface of a well bore or
11 casing, when said sleeve is in one of its said downhole position and its
12 said uphole position; and
13 an actuation mechanism mounted to said mandrel, said actuation mechanism
14 being adapted to move said sleeve between said uphole position and
15 said downhole position relative to said mandrel assembly.
- 1 2. The guiding mechanism recited in claim 1, further comprising:
2 a plurality of longitudinal slots in said sleeve; and
3 a tang extending radially from each said finger into one of said sleeve slots;
4 wherein each said tang is oriented to be forced in one of the uphole and the
5 downhole directions by one end of its respective sleeve slot, when said
6 sleeve is in one of its said uphole position and its said downhole
7 position, thereby forcibly pivoting said downhole end of its respective
8 said finger radially outwardly to forcibly contact the well bore or
9 casing.

1 3. The guiding mechanism recited in claim 2, wherein:
2 each said tang extends radially outwardly from its respective said finger; and
3 said sleeve is positioned radially outwardly from said tangs, thereby
4 positioning said lower ends of said sleeve slots to force said tangs in
5 said uphole direction to forcibly pivot said downhole ends of said
6 fingers radially outwardly when said sleeve is in its said uphole
7 position.

1 4. The guiding mechanism recited in claim 3, wherein said sleeve is
2 configured to at least partially surround said plurality of fingers when said sleeve is in
3 its said downhole position.

1 5. The guiding mechanism recited in claim 4, wherein said sleeve
2 contacts radially outward edges of said plurality of fingers to forcibly pivot said
3 downhole ends of said plurality of fingers radially inwardly when said sleeve is in its
4 said downhole position.

1 6. The guiding mechanism recited in claim 1, further comprising a spring
2 positioned to bias said sleeve in one of said uphole and downhole directions.

1 7. The guiding mechanism recited in claim 1, wherein said mandrel
2 assembly comprises:
3 a mandrel;
4 a finger cage attached to a lower end of said mandrel; and
5 a plurality of pivot points on said finger cage, each said uphole end of each
6 said finger being pivotably attached to one of said pivot points.

1 8. The guiding mechanism recited in claim 1, wherein:
2 said actuation mechanism comprises a bow spring biased outwardly;
3 a first end of said bow spring is fixedly attached relative to said mandrel; and
4 a second end of said bow spring is attached to said sleeve.

1 9. The guiding mechanism recited in claim 8, wherein:
2 an upper end of said bow spring is fixedly attached relative to said mandrel;
3 a lower end of said bow spring is attached to said sleeve;
4 outward flexing of said bow spring pulls said sleeve in said uphole direction;
5 and
6 inward flexing of said bow spring pushes said sleeve in said downhole
7 direction.

1 10. The guiding mechanism recited in claim 1, wherein said sleeve is
2 adapted to forcibly pivot said downhole ends of said plurality of fingers radially
3 outwardly when said sleeve is in its said uphole position.

1 11. The guiding mechanism recited in claim 1, wherein said sleeve is
2 adapted to forcibly pivot said downhole ends of said plurality of fingers radially
3 inwardly when said sleeve is in the other of its said downhole position and its said
4 uphole position.

1 12. The guiding mechanism recited in claim 11, wherein said sleeve is
2 adapted to forcibly pivot said downhole ends of said plurality of fingers radially
3 inwardly when said sleeve is in its said downhole position.

1 13. A method for retrieving a fish from a well bore or casing, comprising:
2 providing a fishing tool attached to a work string, said fishing tool having a
3 mandrel assembly, a latch mechanism, an actuation mechanism, and a
4 plurality of elongate fingers pivotably attached to a lower end of said
5 mandrel assembly;
6 lowering said fishing tool into a well bore or casing;
7 forcibly pivoting the downhole ends of said plurality of fingers radially
8 outwardly, to forcibly contact the well bore or casing;
9 further lowering said fishing tool into the well bore or casing until said fingers
10 surround a fish and guide the fish into contact with said latch
11 mechanism;
12 latching the fish to said fishing tool with said latch mechanism; and
13 pulling said fishing tool and the fish from the well bore or casing.

1 14. The method recited in claim 13, further comprising pivoting said
2 downhole ends of said plurality of fingers radially inwardly after latching the fish
3 with said latch mechanism.

1 15. The method recited in claim 13, further comprising:
2 providing a sleeve mounted for longitudinal movement relative to said
3 mandrel assembly;
4 providing a bow spring on said mandrel assembly; and
5 applying force with said bow spring, thereby moving said sleeve to forcibly
6 pivot said downhole ends of said plurality of fingers radially outwardly
7 by contact with said sleeve.

1 16. The method recited in claim 15, further comprising:
2 providing a sleeve mounted for longitudinal movement relative to said
3 mandrel assembly;
4 providing a bow spring on said mandrel assembly; and
5 applying force with said bow spring, thereby moving said sleeve to forcibly
6 pivot said downhole ends of said plurality of fingers radially inwardly
7 after latching the fish with said latch mechanism.